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DRAWINGS ATTACHED

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(19)

(54) DISPENSER FOR A MOIST FLEXIBLE SHEET MATERIAL

(71) I, KURT WALKER, a German citizen, residing at Marienstrasse 1b, 7000 Stuttgart 1, Germany, do hereby declare the invention for which I pray that a patent may be granted to me, and the method by which it is to be performed, to be particularly described in and by the following statement:—

The present invention relates to a dispenser for dispensing a moist flexible fibrous sheet material which has been treated with a suitable liquid for medical, sanitary or similar purposes. More particularly but not exclusively, the dispenser according to the invention is intended for anal-hygienic purposes, for example, for use in toilets.

There are various kinds of dispensers already known which are intended, for example, for use in kitchens, toilets, or hospitals and comprise containers for receiving wrapping paper, toilet or toweling paper or even surgical bandages or dressings. None of these containers is, however, suitable for receiving a liquid or a moist roll which is already saturated with a liquid, since it is not closed airtight toward the outside and the liquid would either evaporate from the container itself or from the moist roll within the container. Furthermore, these containers are usually also not provided with supporting means which ensure that the respective container will be held in such a position that, if a moist roll is inserted therein, the liquid with which this roll is saturated will not drain out of it so that the roll will eventually dry out.

It is an object of the present invention to provide a dispenser which reduces the above-mentioned disadvantages and comprises a container which is especially suitable for receiving a moist roll or long folded strip of any desired fibrous sheet material and is designed so as to prevent as much as possible the evaporation of the liquid with which the roll or folded strip is saturated or which might be held in the container for moistening the sheet material before it is withdrawn from the container.

According to the present invention there is provided a dispenser for dispensing a moist flexible fibrous sheet material, the dispenser including in combination a container and a supply of flexible fibrous sheet material within said container, the material being moist or the dispenser containing a liquid for moistening the material prior to dispensation thereof the container being substantially airtight except for a dispensing passage through which the sheet of material may be drawn from said supply, the dispensing passage having a length and width substantially equal respectively to the width and thickness of the sheet material so that the container is substantially air-tight when the sheet material is in said passage to thereby substantially prevent the liquid in the supply of material or the container from evaporating from the container, and further including cutting means mounted on the outside of said container for cutting off a withdrawn section of said material. Preferably, the dispenser has gripping means on the outside of said container adapted to grip a part of said material intermediate said passage and said cutting means.

In order to render the container according to the invention as inexpensive and economical as possible, in one form it is preferred to make it of a single piece of material, for example, of synthetic plastics, which encloses the roll or folded strip of sheet material and which may be thrown away when empty. Such containers may be made of a very simple shape and be mass-produced at a very low cost. They may be useful especially if, when made, they already contain the roll or folded strip of sheet material in the moistened or saturated condition. The container may, however, also consist of several parts so as to permit it to be refilled when ever necessary and also to permit different sheet materials and/or different liquids to be inserted therein.

Another preferred feature of the in-

vention consists in providing a supporting device for the container which permits this container to be secured in the proper operative position. This supporting device may consist, for example, of a pair of feet which are secured to the opposite ends of the container and extend transverse to the axis of the latter and have a length substantially equal to the width of the container. These feet permit the container to be rested or mounted in a fixed position in which any excess of the liquid with which the roll or folded strip of sheet material is saturated will always accumulate in a predetermined part of the container or in which the liquid which is filled into the container for saturating the sheet material before it is withdrawn through the dispensing slot will always be located in the proper part of the container for such a saturation.

For producing the container at a low cost, it is advisable to make it in the form of a cylindrical casing and to provide its opposite ends either with a fixed cover and a removable cover or with removable covers on both ends. These removable covers are preferably secured to the casing in a predetermined position by bayonet or snap locks or the like and they are further provided with guide bars projecting for a short distance toward the inside of the casing for guiding the ends of a core on which the roll of sheet material is wound. These guide bars on the two covers may extend either vertically or diagonally depending upon the particular operating position in which the container is to be mounted. If the guide bars extend diagonally to the container and at an angle to its supporting device, the container may be mounted in either of two operative positions extending at an angle of 90° to each other. The container may thus be mounted either on a horizontal surface, for example, on a table, or on a vertical surface, for example, on a wall. Since the guide bars extend diagonally in either of these positions, the core of the roll the projecting ends of which are slidable between these guide bars will always tend to slide downwardly within the container so that at least the outer layers of the material on the roll which are next to be withdrawn from the container will always be immersed in the liquid which is kept in the lowest part of the container. In any operative position of the container, its dispensing slot should extend substantially parallel to the axis of the container and thus in a horizontal direction and be preferably located within the upper part of the container. The width of the slot is so narrow that it will be closed substantially air-tight and liquid-tight by the sheet material passing therethrough so that the liquid which is held in the container will not evaporate to the outside.

Another preferred feature of the invention consists in providing the cutting device which extends along the dispensing slot at one side thereof with a straight or serrated blade. This cutting device may, however, also be similar to the blades of scissors and be pivotable relative to the slot about an axis near one end thereof. The gripping means intermediate the dispensing slot and the cutting device, the outside of the container may be formed by a row of gripping pins for holding the end of the sheet in a fixed position which is to be torn or cut off. These gripping pins further prevent the short end of the sheet material which projects to the outside of the slot after each cutting operation from slipping back through the slot toward the inside of the container. It is, however, also possible to provide the container with a straight or serrated cutting edge along the dispensing slot and with a holding plate which may, for example, be pivotable about the container and extend parallel to the slot and the cutting edge. This holding plate may be pressed downwardly, for example, with the thumb of one hand, so as to press the end of the sheet material projecting through the slot against the cylindrical surface of the container adjacent to the slot so that a moist sheet or strip of any desired length may then be easily cut off.

According to another preferred feature of the invention it is advisable to provide the dispensing slot with resilient sealing lips, preferably of resilient plastics material, which engage upon the opposite sides of the sheet material and thus seal the container tightly toward the outside. When employing such resilient sealing lips on a container which is adapted to be refilled, it is also possible to make the opening in the container of a greater width so as to permit sheet materials of different thicknesses to be employed since the effective width of the slot is determined by the resilient sealing lips. These materials may be of any suitable type and consist, for example, of paper, gauze or fibrous fleece materials of a very inexpensive kind which, even when wet, have a good tensile strength.

The liquid with which the roll or folded strip of sheet material is saturated or into which the dry sheet material is immersed in the container contains medicinal substances, for example, monovalent or polyvalent alcohols such as, for example, ethanol, glycerine, or sorbitol, or antibacterial substances, for example, hexachlorophene. The liquid may in addition contain substances with a cooling effect, for example, menthol, or odorous substances, for example, perfume oils, or

curing substances. Although the moist sheet material may be employed for any other desired purpose, it is primarily intended for anal-hygienic purposes.

The features and advantages of the present invention will become more clearly apparent from the following detailed description thereof which is to be read with reference to the accompanying drawings, in which —

Figure 1 shows a perspective view of a dispenser according to the invention together with a device for mounting this dispenser in its operative position;

Figure 2 shows a cross section which is taken along the line II—II of Figure 1;

Figure 3 shows a perspective view of a modification of the dispenser in a first of two operative positions in which it may be employed;

Figure 4 shows an end view, partly broken away and in section, of the dispenser according to Figure 3 in its second operative position;

Figure 5 shows a perspective view of a transparent dispenser with a pair of feet and gripping pins;

Figure 6 shows a cross section of a modification of the dispenser according to the invention in the form of a refillable container with a dry roll of sheet material in its upper part and a treating liquid in its lower part;

Figure 7 shows a front view of a dispenser with a cutting device;

Figure 8 shows a vertical cross section of the dispenser according to Figure 7, while

Figure 9 shows a perspective view of a part of a dispenser similar to that as shown in Figures 7 and 8, but with a different support of its cutting device.

Figures 1 and 2 illustrate a dispenser according to the invention which comprises a tubular container 1 which is closed at one end and adapted to receive a roll 4 of a fibrous sheet material which is saturated with a liquid containing chemical and pharmaceutical, medical or other ingredients. A sheet 2 of this material is to be unwound from the roll 4 and withdrawn to the outside through a narrow longitudinal slot 3 in the container wall. The length and width of this slot 3 are designed to be substantially the same as the width and thickness of the sheet of material so that the slot is rendered substantially airtight by the sheet 2 so that the liquid with which the roll 4 is saturated or which is held in the container 1 will be prevented from evaporating. The container 1 may either consist of a single piece of an inexpensive material, for example, plastics, which may be thrown away after the roll 4 of saturated sheet material has been consumed or it may be designed for being refilled. For cutting off a sheet 2 of the desired length, the container is provided above the slot 3 with a cutting edge 5. This cutting edge 5 may, however, also be provided underneath the slot 3 which may in some cases facilitate the cutting operation. Figures 1 and 2 also illustrate the supporting device 6 for the container 1 which consists of a flat board or plate 7 which is secured to the container 1, for example, by screws, and is provided with a pair of holes 8 in its upper part for suspending the dispenser on hooks on a wall. As shown in Figure 2, the container is further provided on its side opposite to that containing the slot 3 with a flangelike projection 9 into which the screws for securing the plate 7 to the container may be screwed. This projection 9 holds the container 1 at a certain distance from the plate 7 so that the cover 10 of the container may be easily fitted over or into the open end of the latter and will then close the container airtight and liquid-tight. In this particular embodiment of the invention, the cover 10 is additionally locked to the container 1 by means of a snap lock 11 which may be easily released. Figures 1 and 2 also indicate parallel guide bars 21 which project from the inner side of the cover, and similar guide bars (not shown) project from the inner side of the other end of the container the guide bars being adapted to guide the opposite ends of the core 22 on which the roll of sheet material is wound.

Figures 3 and 4 illustrate a dispenser of a slightly different construction. The container 12 of this dispenser is provided with four feet 13 which are secured to the container near the opposite ends thereof and permit the container either to be used while mounted on a table or other horizontal surface in a position as shown in Figure 3, or while being hooked into eyes 14 on a board or plate 15 which is secured to a wall, as shown in Figure 4. The longitudinal slot 16 in the container 12 through which a sheet may be withdrawn is located in either of these operating positions of the container 12 at an upper side of the latter.

Figure 5 illustrates a dispenser according to another modification of the invention. It comprises a container 17 which may be very easily produced and consists of a cylindrical casing 18 the opposite ends of which are closed by covers 19. This casing 18 may be made, for example, of a transparent plastics so that the proper unwinding of the sheet material from the roll 20 and the amount thereof remaining on the roll at the inside of the container 17 may be observed from the outside. The covers 19 may be secured to the casing 18, for example, by means of bayonet locks, not shown, and each of them is provided on its inner side with a pair of parallel guide bars 21 for guiding the projecting ends of the core 22 on which the

roll 20 of sheet material is wound. The feet 23 by means of which the container may be supported on a table or the like may be cast either integral with the casing 18 or with the covers 19. The upper side of casing 18 is provided with a dispensing slot 24 which extends parallel to the axis of the casing and has a length and width equal to the width and thickness respectively of the sheet material on the roll 20. For tearing off a piece of the sheet material which has been withdrawn through the dispensing slot 24, a serrated cutting edge 25 is provided along this slot while for gripping the end of the sheet material which projects from the slot 24 so as to prevent it from slipping back into the container 17 a row of gripping pins are provided on and project from the outer surface of the casing 18 between the slot 24 and the cutting edge 25.

In place of these gripping pins 26, it is, however, also possible to provide a pivotable bar or strip along the dispensing slot 24 which by suitable spring means may clamp the end of the sheet material while being torn off against the surface of casing 18.

A further modification of the dispenser according to the invention is illustrated in Figure 6. It comprises a container 28 for a roll 27 of a sheet material 33. This container 28 is adapted to be refilled with a liquid and with a dry roll of a sheet material and is therefore provided with a pivotable cover 29. On or adjacent to its opposite end walls the container 28 is provided with slotted transverse bars 30 into which the opposite ends of the core or pin 31 carrying the dry roll 27 may be inserted. This roll 27 is pressed downwardly by a spring 32 which also exerts such a force upon the roll that it will not continue to rotate and will therefore not be excessively unwound when the desired length of the sheet material 33 is being withdrawn from the dispensing slot 37. From the roll 27 the sheet material passes downwardly under a roller 35 and through a quantity of treating liquid 34 in the bottom of the container 28 and then upwardly toward two wiping rollers 36 and between the latter to and through the dispensing slot 37 which is sealed toward the outside by two elastic sealing lips 38 which engage upon the upper and lower sides of the sheet 33. When the desired length of this sheet is withdrawn from the dispensing slot 37, it may be torn off on the cutting edge 39. The container 28 may be secured in a simple manner by means of hooks 40 and eyes 41 on a wall 42. This embodiment of the invention has the advantage that the roll 27 of sheet material may be inserted in a dry condition into the slots in the supporting bars 30 of the container and that any desirable liquid 34 may be poured into the container 28 to saturate the sheet material freshly before it is dispensed from the container by being pulled through the slot 37. Due to the provision of the sealing lips 38, the opening in the casing may also be made of a greater width so as to permit sheet materials of different thicknesses to be employed since the effective width of the slot is determined by the resilient sealing lips 38.

The liquid for saturating the sheet material contains medically effective substances, for example, monovalent or polyvalent alcohols such as, for example, ethanol, glycerine, sorbitol, and antibacterial substances such as hexachlorophene. The liquid may additionally contain substances with a cooling effect, odorous substances such as perfume oils and antiseptics. All of these substances may be employed in an aqueous solution or emulsion or be applied in the saturating liquid in any other form.

Figures 7 and 8 illustrate how such a cutting device may be designed and mounted on a cylindrical container similar to one of those as previously described. On the outer side of this cylindrical container 46, the covers 47 of which are provided with feet 48 a cutting bar 49 is secured which has a horizontal surface and is disposed underneath and parallel to the dispensing slot 50. The section of the material to be cut off is pressed upon the cutting bar 49 by a hold-down bar 51 which is secured to a substantially semicircular plate 52 which is curved around and engages with the outer surface of the container 46 and is slidably peripherally to a limited extend back and forth around the container in the direction of the double arrow 55 between a retracted position, in which a projection 54 on one end of this member 52 engages into a substantially semicircular groove 53 in the outer wall of the container 46, and a hold-down position in which the hold-down bar 51 presses the sheet which has been withdrawn through the dispensing slot 50 upon the cutting bar 48. For manipulating the curved plate 52 and the hold-down bar 51 thereon, plate 52 is provided with a handle 56. Adjacent to the hold-down bar 51, the container 46 is further provided with a guide bar 57 which extends along the entire length of the container and carries a blade holder 59 from which a cutting blade 58 with a convex or conical cutting edge projects which terminates into a sharp point. This blade holder 59 is slidable along the guide bar 57 and the cutting edge of blade 58 is capable of cutting in both directions.

Figure 9 shows a perspective view of a part of a container similar to that as shown in Figures 7 and 8 but provided with a different support for the cutting device. The curved supporting plate 60 which is

pivotably mounted at 61 on the upper part of the cylindrical container is provided on its free end with a rail 62 which together with the end 63 of the supporting plate 60 presses the sheet of tissue or the like tightly upon the cutting bar. In order to prevent the blade holder from sliding off the ends of the guide bar 64 when the blade holder is moved along the latter in one or the other direction, these ends of guide bar 64 may be provided with stop projections 65.

For cutting off individual sections of material it is also possible to employ cutting devices different from those as previously described. Thus, for example, a cutting blade, may be used which is pivotably mounted at one end and, when pivoted downwardly, cuts off the saturated material along the cutting edge of a supporting surface in a manner similar to that of scissors.

Although the described embodiments have rolls of material it will be appreciated that the web could also be folded in a zig-zag fashion in which case the containers would preferably be a rectangular shape.

WHAT WE CLAIM IS:—

1. A dispenser for dispensing a moist flexible fibrous sheet material, the dispenser including in combination a container and a supply of flexible fibrous sheet material within said container, the material being moist or the dispenser containing a liquid for moistening the material prior to dispensation thereof the container being substantially airtight except for a dispensing passage through which the sheet of material may be drawn from said supply, the dispensing passage having a length and width substantially equal respectively to the width and thickness of the sheet material so that the container is substantially airtight when the sheet material is in said passage to thereby substantially prevent the liquid in the supply of material or the container from evaporating from the container, and further including cutting means mounted on the outside of said container for cutting off a withdrawn section of said material.

2. A dispenser as claimed in claim 1, further including gripping means on the outside of said container adapted to grip a part of said material intermediate said passage and said cutting means.

3. A dispenser as claimed in claim 1 or 2 wherein the container comprises a single integral structure containing said supply.

4. A dispenser as claimed in claim 1 or 2 in which said container consists of at least two parts adapted to be secured to each other and to be at least partly separated from each other to permit said supply of sheet material to be renewed when required.

5. A dispenser as claimed in claim 4, in which said supply consists of a roll of said material in a moist condition and rotatably mounted in said container.

6. A dispenser as claimed in claim 1, 2, 3 or 4 in which said container is adapted to hold said liquid in its lower part and said supply consists of a dry roll of said material rotatably mounted in said container, said dispensing passage forming a longitudinal slot in a wall of said container said dry roll and said slot being disposed above the level of said liquid, and means for guiding said material so that the material is unwound from said dry roll and passes through said liquid and then to and through said slot.

7. A dispenser as claimed in anyone of claims 1 to 6, in which said passage includes a longitudinal slot in said container, and resilient sealing lips secured to said container wall adjacent to said slot so as to engage with the opposite sides of said material passing through said slot and between said lips to the outside of said container.

8. A dispenser as claimed in anyone of claims 1 to 7, further comprising supporting means connected to said container for mounting it in its operative position.

9. A dispenser as claimed in claim 8, in which said supporting means comprise a pair of feet secured adjacent opposite ends of said container.

10. A dispenser as claimed in claim 1 or 4 or anyone of claims 5 to 9, when dependent thereon, wherein said container comprises a cylindrical casing having covers on its opposite ends, at least one of said covers being removably connected to said casing, means for locking said removable cover in a predetermined position to said casing, and a pair of parallel rail like projections secured to the inner side of each of said covers and extending in the same direction on both covers, said supply consisting of a roll of said material, and a core upon which said roll is wound, said core having ends projecting from said roll and inserted between and slidable along the associated pairs of projections.

11. A dispenser as claimed in claim 10, in which said dispensing passage comprises a longitudinal slot extending parallel to the axis of said casing, said slot being located in an upper part of said casing when said dispenser is mounted in an operative position.

12. A dispenser as claimed in any one of claims 1 to 11 wherein the cutting means comprises a cutting edge along which a withdrawn section of said material may be torn off.

13. A dispenser as claimed in claim 2 or any one of claims 3 to 12 when dependent thereon, in which said gripping means comprises a row of gripping pins secured to and projecting outwardly from said con-

tainer and disposed between said passage and said cutting edge.

14. A dispenser as claimed in claim 2 or any one of claims 3 to 12 when dependent thereon, in which said gripping means comprise a holding member having a length substantially equal to the length of said dispensing passage and mounted on the outer side of said container so as to be pivotable relative to said container about an axis extending parallel to the axis of said container for pressing said part of said material against said container wall.

15. A dispenser as claimed in any one of claims 1 to 11 in which said cutting means comprise a fixed cutter blade secured to said container wall and extending substantially parallel to said dispensing passage and spaced at a certain distance therefrom, and a movable cutter blade movable relative to said fixed blade and adapted together with said fixed cutter blade to cut said material.

16. A dispenser as claimed in claim 15, in which said cutting means includes a guide rail also mounted on said container wall and extending parallel to said fixed blade, and a cutter blade slidable along said guide rail and having a cutting edge adapted to slide longitudinally along said fixed blade for cutting off said material.

17. A dispenser as claimed in claim 16, in which said cutting means includes a supporting member having a length substantially equal to the length of said dispensing passage and pivotably mounted at one end on the outer side of said container wall so as to be pivotable relative to said container about an axis extending parallel to the axis of said container, the guide rail being secured to the other end of said supporting member, a hold-down member secured to and having substantially the same length as said rail but spaced from the longitudinal outer edge of said rail for pressing said material adjacent to said passage upon said fixed blade.

18. A dispenser as claimed in claim 1, in which said container has a substantially rectangular shape, and said supply of sheet material in said container consists of a long sheet folded in a zig-zag shape and having one end projecting through said dispensing passage extending parallel to and at a distance from the bottom of said container.

19. A dispenser substantially as herein before described with reference to and as illustrated in the accompanying drawings.

20. A dispenser as claimed in any one of the preceding claims, in which said liquid for saturating the material contains chemically, pharmaceutically and medically effective substances.

21. A dispenser as claimed in any one of claims 1 to 20, in which said liquid contains substances with a cooling effect.

JENSEN & SON,
Agents for the Applicants,
8, Fulwood Place,
London, WC1V 6HG.
Chartered Patent Agents.

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Sheet 1

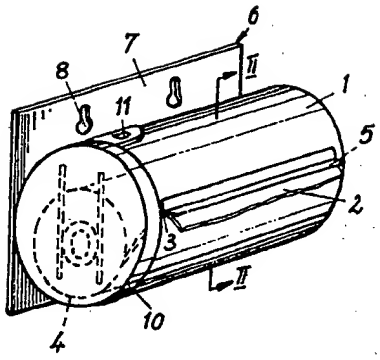

Fig. 1

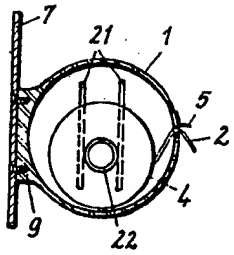

Fig. 2

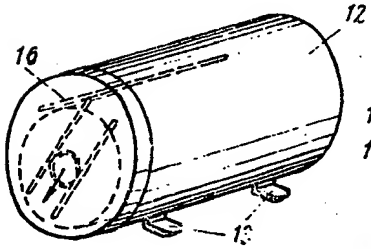

Fig. 3

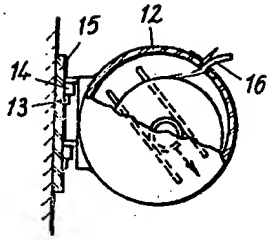

Fig. 4

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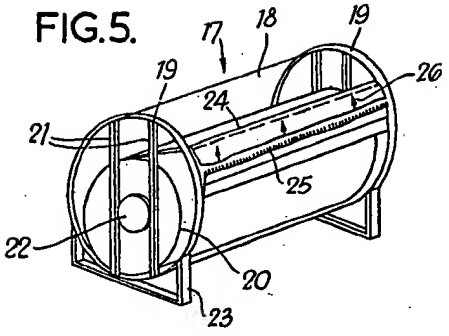
Sheet 2

FIG.5.



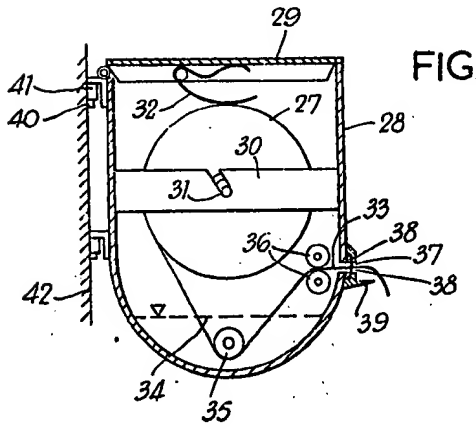


FIG.6.

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Sheet 3

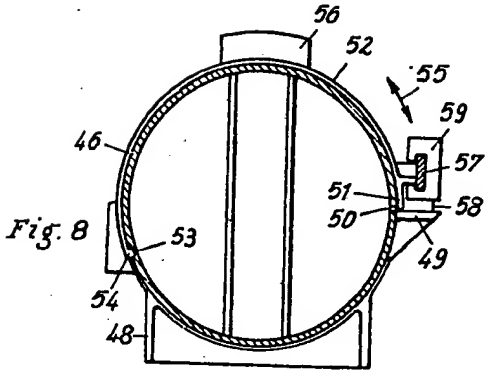

Fig. 8

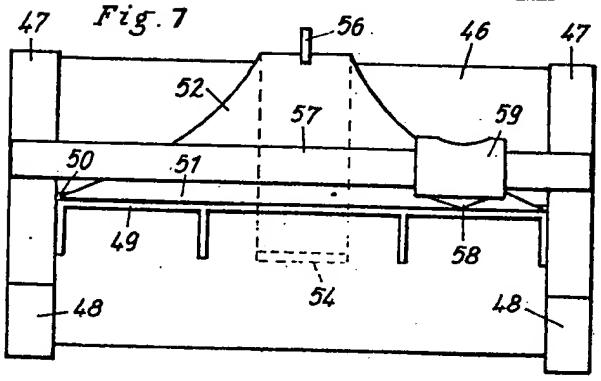

Fig. 7

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Sheet 4

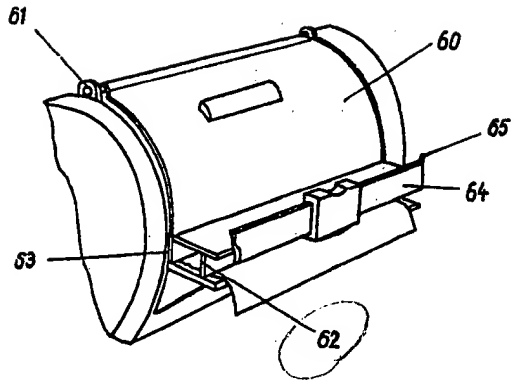

Fig. 9